11: India G-4, 5 (1960-1961) 1962 AWII Kerala AWII

134 units. Actual cost is borne by the beneficiaries because the State recovers it by easy
185 instalments. The average cost of soil conservation is Rs. 150 per acre. The total cost of conserving one million acres at an average rate of Rs. 150 per acre would be
[464] Rs. 1.5 crores per year assuming that the programme is evenly phased. Soil conservation work is also very labour intensive and the proposed programme would give continuous employment to about 17,500 persons over the next 10-year period.

Related Aspects

*433 2.79 For full effectiveness, the development programme for agriculture, as
649 suggested above, would need a larger extension organization than that which was set up in 1953. It is expected to cover the whole of the State by the middle of the Third Plan period. The extension work at present is not intensive enough. The number of extension workers is too few to be really effective; the staff capacity needs to be augmented. In this connection the Agriculture Personnel Committee has recommended that the work in charge of a village level worker should be reduced by half. The Committee has also made suggestions on other aspects such as training and education, etc., of extension workers. The State Government may examine these proposals with a view to implementation as early as possible.

Marketing

*433 2.80 The small cultivators generally experience great difficulty in disposing of
442 their produce at reasonable prices. In case of some commodities like ginger, pepper
438 and arecanut, the difference between the price received by producers and that paid by consumers is as high as 100 per cent. In addition, none of the commodities except lemon grass is properly graded and this leads to serious consequences from the point of view of export markets. Marketing, processing and grading facilities should
[656] be developed so that both the producers as well as the consumers are benefited. In this context, as recommended by the Directorate of Marketing and Inspection, all the 41 wholesale markets in the State should be regulated. At present only four are regulated.

Agricultural Credit

*433 2.81 The average level of earning of farmers being rather low, most of them
452 require credit facilities for making improvements in their land. According to a survey, conducted in 1960 by the Bureau of Economic Studies, 89 per cent of the farmers need credit of some type. It also reveals that 82 per cent of the farmers need short term credit while medium and long term credit are needed by 56 and 34 per cent of farmers respectively. On the basis of the findings of the survey, the annual agricultural credit needs for the whole State may be put at 32.8 crores, of which Rs. 18.67 crores would be in the nature of short term credit, Rs. 6.74 crores medium term credit and Rs. 6.5 crores long term credit. The garden crops would account for Rs. 21.6 crores and paddy Rs. 11.2 crores.

11: India G-4, 5 (1960-1961) 1962 AW11 Kerala AW11

*433 245 [439] 2.85 The country is deficit in the output of coconuts and annually imports about Rs. 15 crores worth of copra and coconut products. This is a heavy drain on foreign exchange resources of the country. Even after imports the total available supply of coconuts is not enough and the oil millers are, therefore, hard hit by this shortage. The demand for this commodity is increasing year after year while the production has been more or less stagnant at 3,100 million nuts. If this situation is allowed to drift unchecked, imports of coconuts will have to be increased progressively. In view of these factors, measures to increase productivity and the output of coconut are of extreme urgency.

2.86 Coconut cultivation in the State today faces a multitude of problems. The average yields are only about 40 nuts a tree per annum, that is, 3,000 nuts an acre, as against 60 to 100 nuts per tree in Philippines and some of the other Far Eastern countries. Moreover, the yield has shown no tendency to increase over the last 10 years. The focal point of coconut development programme, therefore, should be to break through the stagnant levels of productivity of coconut. The following discussion follows this line of argument.

*433 245 241 2.87 Poor yields are largely due to the absence of regular and adequate manuring. The crop needs large quantities of manure. But the farmers, majority of whom are poor, cannot afford to spend on fertilizers which in the case of coconuts show results only after two or three years. Farmers, therefore, prefer to invest whatever resources they have in manuring the field crops which bring in quicker returns. Coconuts thus get neglected. In addition to starving the coconut trees of fertilizers, many farmers grow exhaustive crops such as banana and tapioca as an understorey. This practice exhausts the soil and it needs large funds and a long period ranging from 3 to 5 years, to rehabilitate such gardens.

[647] 2.88 To raise the yields, an intensive application of fertilizers containing NPK has been recommended by the Indian Central Coconut Committee. The Committee is of the opinion that fertilizers are more suited to acidic soils on which coconut is generally grown in Kerala. It estimates the cost of requisite fertilizers to be of the order of Rs. 93 per acre per annum but that is beyond the means of a small farmer. It is, therefore, suggested that the State should arrange to advance loans for the purchase of fertilizers, and these loans may be recovered after three years. To start with, 30 per cent of the area may be brought under this programme. The annual requirement of fertilizers would be about 26,000 tons of superphosphate. The programme would cost Rs. 3 crores per year, that is, Rs. 9 crores for the first three years after which the loans may be granted out of the recoveries. The programme may be extended to cover 75 per cent of the area earmarked for coconut during the Fourth Plan. Better manuring coupled with the necessary cultural operations, can raise the yields from 40 nuts to 60 or 70 nuts per tree which would thus amount to an increase of 50 to 75 per cent over the present rate of production.

*433 245 242 2.89 Coconut crop is subject to a heavy incidence of diseases and pests. The diseases such as "leaf rot" and "root diseases" are rampant and widespread and have spread to six districts affecting over 50 per cent of the trees in the State. The annual loss of production due to these diseases is estimated at Rs. 2 to 3 crores. There is already a scheme in force to spray about 7 million trees in the infected pockets.

11: India G-4, 5 (1960-1961) 1962 AWll Kerala AWll

Forest Roads

4.57 Although in respect of overall position regarding forest roads, Kerala is comparatively better off and accessibility is quite good, there are some remote areas for which new roads are required. Opening up of these areas through forest roads would permit tapping of certain pockets of forest resources uptil now lying untapped. Some of these important roads which have been suggested for being taken up during the Third Plan are :

(*a*) *Roads from Dhon to Palamalai*—to tap the Chenat Nair reserved forests and to make Palamalai a summer resort.

(*b*) *Extension of the Silent Valley roads to the borders of the Nilgiris district*—to tap the rich resources of the Silent Valley reserved forest and the improvement of its existing natural regeneration.

(*c*) *Construction of a road from Nelliampathy Parambikulam Tellikkal.* This will make Sungam and Parambikulam Ranges accessible through the Kerala territory only. At present, the State has to depend on the goodwill of the Madras Forest Department for the extraction of forest produces.

The cost of constructing these roads is estimated to be Rs. 50 lakhs.

Training Facilities

4.58 The programme for raising forest plantations can be implemented smoothly only if there is adequately trained personnel to deal with the several technical problems. At present the staff is generally deputed to Forest Colleges at Dehra Dun and Coimbatore for training. These colleges cannot, however, meet the requirements of training lower grade staff. It is, therefore, suggested that in view of the importance of forestry to Kerala, this State should have a separate training institute of its own. This institute, may be located at Peechi.

Resource Survey

4.59 For proper planning of forest-based industries, the exact extent of availability and location of different types of forest resources should be known. In the past, development has been impeded by industries being allotted more areas than was warranted by their capacity. This has thwarted development of other industries which could have utilized the surplus raw material from the forest coupes. These defects can be remedied only if a full inventory of forest resources is available. Uptil now only a survey of bamboo areas has been carried out. During the Third Plan a full resource survey should be carried out.

ESTABLISHMENT REQUIRED FOR THE DEVELOPMENTS PROPOSED

4.60 If the development programmes proposed in this report are to be carried out, strengthening of the Forest Department will be necessary. Appointment of

11: India G-4,5 (1960-1961) 1962 AWll Kerala AWll

two more Conservators of Forest, one to deal with general development works of the State and the other for the new plantations may be considered. It is also proposed that an additional Chief Conservator of Forests to cope with the heavy work may be appointed as soon as the tempo of development work has gained momentum, say, by the middle of the Third Plan period. The Territorial Divisional Forest Officers should each be given a gazetted assistant to deal with all the development works in their divisions. The present annual expenditure on Establishment amounts to Rs. 8.23 lakhs (1958-59). If the above suggestions are accepted there should be an increase of about 25 per cent. It is also expected that if the tempo of developments is maintained, higher amounts will be needed in the Fourth Plan. The establishment expenditure is, therefore, worked out as under :

Third Plan period	Rs. 10.29 lakhs annually.
Fourth Plan period	Rs. 10.97 lakhs annually.

INVESTMENT AND OUTPUT IMPLICATIONS

4.61 The major part of investment during the coming decade will be on raising the various commercial plantations discussed above. Investment on other items is summarized in Table appearing under Para 4.53. The amount of Rs. 3 crores[1] which is expected to be spent during the Third Plan period on acquisition of private forests, does not appear in the investment figures since the amount is only in the nature of a monetary transfer.

4.62 As a result of the development programmes suggested above, output contributed by the forests may be envisaged to increase from the following sources during the coming decade :

(1) Sale of forest produce from areas clear-felled for teak plantations. This item will be quite substantial.
(2) Income from thinning of teak plantations.
(3) Income from bamboo and eta reed resources, which will start accruing by the end of the Third Plan period when all the flowered areas would have been regenerated.
(4) Income from other plantations would start accruing only towards the end of the coming decade or during the beginning of the Fifth Plan since gestation period before the plantations start maturing is rather long.

4.63 It is difficult to give an exact forecast but taking the above factors into account, the increase in income accruing from forestry during the coming decade is taken to be as follows. It is assumed that income at the end of the Second Plan, that is, during 1960-61 would be 10 per cent higher than that in 1955-56, in 1965-66 twenty per cent higher than that in 1955-56 and by 1970-71 it would be one and a half times the income in 1955-56. On this basis projections for State income from forestry would

[1] The Third Plan has allotted Rs. 3.75 crores for Forest Development which compares quite favourably with investment suggested by us. However, it has to be kept in mind that our figure does not include finances for acquiring private forests, which the State Plan has to provide for.

11: India G-4,5 (1960-1961) 1962 AWll Kerala AWll

433 442 443 organizational and physical. Most of the fish markets lack such facilities as adequate supply of water, drainage, proper flooring, wire screen, etc. Clean and hygienic conditions for the sale of fish should be created in all the consumption centres. A number of retail and wholesale fish markets should be built at all the major consumption centres. Twenty of these markets may be a good target for the next decade. Provision of fish storage facilities, by way of small refrigerated cabinets is also necessary in retail marketing. The capital cost for building these new markets and providing the storage cabinets would be about Rs. 20 lakhs of which Rs. 8 lakhs may be under the Third Plan. In order to ensure reasonable return to the fishermen it is imperative that cooperative marketing of fish should be expanded as much as possible.

Servicing of Marine Engines

433 504 5.53 The programme envisaged for mechanized fishing will call for adequate servicing and overhauling facilities. The Integrated Fisheries Development Centres, where most of the mechanized boats will be concentrated, should have properly equipped servicing stations. At least three such stations may be established by the end of the Third Plan, and another five by the end of the Fourth Plan. Together, the capital cost of these eight service stations will be about Rs. 4 lakhs.

Cooperatives

226 474 5.54 Fishermen's cooperatives in Kerala are not well developed. Most of the societies are credit societies. Only three cooperative societies are engaged in the manufacture of nets and two in the marketing of fish. Recently some Producer Cooperative Societies have been organized under the auspices of the Fisheries Department. Nets, boats, etc., are owned by these societies and the members carry on fishing on a cooperative basis.

433 226 474 5.55 Simultaneously with the development of fisheries in the next decade, the fisheries cooperative should also be strengthened. The aim should be to bring the majority of the fishermen within the cooperative fold. The Integrated Fisheries Development Centres should all be organized on a cooperative basis, covering all aspects of the industry.

Staff

433 228 647 655 5.56 The Fisheries Directorate appears to be adequately staffed for the work it has to deal with at present. However, the implementation of the expanded programme suggested in this report will not only entail a considerable strengthening of the existing staff, but also require certain new categories of technical personnel. It will be especially necessary to provide an adequate staff to man the mechanized boats and the technical services necessary to operate the boats. A number of training centres should be opened to train the fishermen in the art of mechanized fishing. In addition, each of the Integrated Fisheries Centres should have a trained Marketing Assistant to assist the fishermen and their Cooperatives in organizing the marketing of their catches. It

will be essential to provide a properly trained and experienced Fisheries Development Officer in overall charge of each Integrated Centre for coordinating its activities.

Training

5.57 At present there are three centres to train fishermen in the State. The training course which extends over six months aims mainly at training the fishermen in the operation, servicing and maintenance of marine engines, making of nets and tackles, improved fishing methods and the fundamentals of navigation.

5.58 These centres are located at Neendakara, Ernakulam, and Beypore. The first two centres can train 20 fishermen each in a batch, and the last can train 15. So far, 272 fishermen have been trained at the Ernakulam and Beypore centres (run by the Fisheries Department), of whom 150 are now actually employed in mechanized fishing. At the Neendakara centre, which is run by the Indo-Norwegian Project, 121 fishermen have undergone training so far.

5.59 The programme suggested for the next 10 years would require a crew of about 6,400. This would involve a huge training programme and entail a heavy burden on the State. Arrangements can at best be made to provide training facilities to about half the number. The rest can receive on-the-job training from the trained fishermen. As about 1,200 trained fishermen would be required by the end of the Third Plan, not only will the capacity of the existing training centres have to be increased but also at least five new centres will have to be established.

5.60 The operation of the proposed medium-sized boats will also require the services of trained skipper-cum-master fisherman. Either a special centre for training skippers should be established in the State, or the facilities at the Government of India Deep-Sea Fishing Stations at Bombay and other places should be expanded. For operating trawlers, the State Government should enlist the collaboration of foreign fishing companies in order to obtain along with the fishing vessels, the services of trained technical personnel. At the same time efforts should also be made to train Indian personnel in the various fields by appointing them as understudies to the foreign technicians or by sending them abroad. The training of Fisheries Development Officers, Marketing Officers and other high level technical staff can be arranged at the Institute of Fisheries Education, which is proposed to be started by the Union Ministry of Food and Agriculture. For training the middle and lower level staff, it is desirable to establish a Fisheries Training Institute in the State.

INVESTMENT AND OUTPUT IMPLICATIONS

5.61 A substantial part of investment will be on mechanization of boat craft and acquisition of trawlers for off-shore fishing. These two items alone will absorb Rs. 6.35 crores out of a total investment of Rs. 10.72 crores.[1] Details of investment on various items are given in Table 27.[2] This does not include expenditure on deve-

[1] The outlay allocated for the Third Plan is Rs. 4.5 crores, which will leave a balance of Rs. 6.75 for the Fourth Plan, if suggestions made in this Report are to be implemented.

[2] [Table 27, appearing on p. 289 of the text, has not been processed — Ed.]